I am glad to say that this and another near-by station, on Spring River, of this rare fern are not likely to be disturbed, as they are rather inaccessible and are surrounded by rocky waste ground that is of little value for utilitarian purposes.

WEBB CITY, MISSOURI.

Notes on the Pteridophytes of the north shore of Lake Superior—II.

O. E. JENNINGS

In this JOURNAL for June, 1913, the writer gave a list of the pteridophytes collected during the summer of 1912 at various points along the north and northwest shore of Lake Superior, ranging from Fort William in the west to Heron Bay in the east, and extending northward to about twenty miles north of Nepigon. During the summer of 1913, the writer and Mrs. Jennings spent another period of three months in the same general region, but working for the most part in different localities. The pteridophytes collected during this second season have been very kindly worked over by Prof. L. S. Hopkins, and it is thought probably worth while as a further contribution to the known distribution of the pteridophytes of North America to publish a record of this collection also.

LYCOPODIALES

1. LYCOPODIUM LUCIDULUM Michx.

Base of Rabbit Mt., 3 mi. s. e. of Stanley; Maloney's Harbor, Magnet Point, Lake Superior; shore of channel, Porphyry Island, Lake Superior.

2. LYCOPODIUM ANNOTINUM L.

On sand-hills 3 mi. s. e. of Stanley; e. side Loon Lake;

rocky w. slope of Porpbyry Island, Lake Superior; Little Fluor Island, Lake Superior.

3. LYCOPODIUM CLAVATUM L.

Along trail near Tee Bay, Thunder Cape, Lake Superior; Surprise Lake, Thunder Cape; top of Rabbit Mt., 4 mi. s. e. of Stanley; east side Loon Lake.

4. LYCOPODIUM OBSCURUM var. DENDROIDEUM (Michx.) D. C. Eaton.

Woods on sand-hills 3 mi. s. e. of Stanley and at base of Rabbit Mt., 4 mi. s. e. of Stanley; alder swamp, Edwards Island, Lake Superior; Little Fluor Island, Lake Superior.

5. LYCOPODIUM COMPLANATUM L.

Along trail near Tee Bay, Thunder Cape; on rounded knob in black spruce forest and on edge of granite bluff, Little Fluor Island, Lake Superior.

6. SELAGINELLA SELAGINOIDES (L.) Link.

Under alder fringe at edge of inlet, Maloney Harbor, Magnet Point, Lake Superior. Although reported as "very common along the north shore of Lake Superior" (Macoun, Cat. Canadian Plants, Pt. V, p. 291) the writer did not collect it in 1912 and saw it but the once in 1913.

EQUISETALES

7. EQUISETUM ARVENSE L.

Wooded coastal cliff 5 mi. north of Magnet Point, Lake Superior; low ground at mouth of Oliver Creek, near Stanley; swamp at head of Fluor Island channel, Lake Superior.

8. EQUISETUM SYLVATICUM L.

Cultivated fields on sand hills 3 mi. s. e. of Stanley; top of sphagnum mound in muskeag, Porphyry Island, Lake Superior.

9. EQUISETUM FLUVIATILE L.

In a bog at Mission and along flats at mouth of Kaministiquia River, Ft. William.

OPHIOGLOSSALES

10. BOTRYCHIUM LUNARIA L.

Grassy plot at cabin, Porphyry Island, Lake Superior.

11. BOTRYCHIUM VIRGINIANUM (L.) Sw.

Sand-hills, Banksian pine barren, 3 mi. s. e. of Stanley; east side of Loon Lake; Maloney Harbor, Magnet Point, Lake Superior.

12. BOTRYCHIUM ONONDAGENSE Underw.

Boggy trail near Grass Lake, Silver Islet, Thunder Cape, Lake Superior.

FILICALES.

13. OSMUNDA CLAYTONIANA L.

Valley near Loch Lomond, 6 mi. s. of Ft. William; new road clearing in sand-hill region 3 mi. s. e. of Stanley; east side of Loon Lake.

14. OSMUNDA REGALIS L.

Between granite knobs n. of Loon Lake.

15. POLYPODIUM VULGARE L.

On slate cliff, Oliver Creek, 3 mi. s. e. of Stanley; east side of Loon Lake; exposed rounded islet with stunted spruce and birch, near Fluor Island, Lake Superior.

16. PHEGOPTERIS PHEGOPTERIS (L.) Underw.

Face of upper cliff, Ft. William; slate ravine at base of Rabbit Mt., 3 mi. s. e. of Stanley, also face of slate cliff, Oliver Creek, near Stanley; Maloney Harbor, Magnet Point, Lake Superior; on rounded exposed rock near Fluor Island and on top of rocky knob, Fluor Island, Lake Superior.

17. PHEGOPTERIS DRYOPTERIS (L.) Fée.

Face of slate cliff, Oliver Creek, 3 mi. s. e. of Stanley; east side of Loon Lake; Maloney Harbor, Magnet Point, Lake Superior; woods near coast of Paps Harbor, Black Bay peninsula; Little Fluor Island, Lake Superior; woods near lighthouse, Porphyry Island, Lake Superior.

18. PTERIDIUM AQUILINUM (L.) Kuhn.

Banksian pine barrens, sand-hills 3 mi. s. e. of Stanley; south of Loon Lake.

19. CRYPTOGRAMMA STELLERI (Gmel.) Prantl.

Face of cliff, Tee Bay, Thunder Cape; face of cliff, Little Fluor Island, Lake Superior.

20. ATHYRIUM FILIX-FOEMINA (L.) Bernh.

Common in moist places; sand-hill region 3 mi. s. e. of Stanley; islet in Porphyry Island channel, and interior of Edwards Island, Lake Superior; near Paps Harbor, and back of Maloney Harbor, Black Bay peninsula; Little Fluor Island, Lake Superior; east side Loon Lake.

21. DRYOPTERIS THELYPTERIS (L.) Gr.

Bog back of Indian Mission, Ft. William.

22. DRYOPTERIS FRAGRANS (L.) Schott.

Face of slate cliff, Oliver Creek, 3 mi. s. e. of Stanley; east side of Loon Lake; face of glacial cliff at Paps Harbor, Black Bay peninsula; talus slope of knob, Little Fluor Island, Lake Superior.

23. DRYOPTERIS SPINULOSA (Muell.) Kuntze.

Edge of clearing, sand-hill region 3 mi. s. e. of Stanley; Maloney Harbor, Magnet Point; alder swamp, Edwards Island, and top of knob, Little Fluor Island, Lake Superior.

24. DRYOPTERIS SPINULOSA var. DILATATA (Hoffm.) Underw.

Along trail, Tee Bay, Thunder Cape; dark woods, Porphyry Island, Lake Superior.

25. DRYOPTERIS RIGIDA (Hoffm.) Underw.

Boggy woods near lighthouse, Porphyry Island, Lake Superior.

Among other things Prof. Hopkins notes that "The one real reason for calling it *rigida* is that it has the glands on the under side of the frond." After comparing the specimens with some European specimens of *rigida*, Prof. Hopkins continues "Lay the two sets of specimens before you and read this line from Eaton: 'It has a larger and broader frond than the European *A. rigidum* but certainly presents no points of specific distinction; and some of the Oregon specimens collected by Mrs. Summers near the Willamette River are so nearly typical *rigidum* that they would not be challenged if mixed with European specimens.'" Further,—of Watson's description (Botany California, Vol. II, p. 346) the following is noted by Prof. Hopkins as being true of the Lake Superior plant: "Fronds one or two feet long, borne on moderately long very chaffy stalks, smooth and green above, paler and glandular beneath, ovate-lanceolate in outline, usually bipinnate; pinnae oblong lanceolate, the lowest ones broadest and a trifle shorter than the middle ones; pinnules oblong (?), incised (?), conspicuously veiny: sori large(?) nearer the midvein than the margin; indusium firm, convex, orbicular with a very narrow sinus, the edge glandular."

D. rigida has heretofore been recorded only from the Old World and in America from Alaska to California, the latter records being regarded by Underwood as represented by a variety (*D. rigida* var. *arguta* (Kaulf.) Underw.).

26. FILIX BULBIFERA (L.) Underw.

Face of slate cliff, Oliver Creek, 3 mi. s. e. of Stanley.

27. FILIX FRAGILIS (L.) Bernh.

Upper cliff Mt. McKay, Ft. William; face of slate cliff, Oliver Creek, 3 mi. s. e. of Stanley; rocky islet

and on talus slope, Little Fluor Island, Lake Superior; face of glacial cliff, Paps Harbor, Black Bay peninsula.

28. WOODSIA ILVENSIS (L.) R. Br.

Eight additional records, faces of cliffs, rocks, and talus slopes: Loon Lake, Silver Islet, Thunder Cape; Paps Harbor, Black Bay peninsula; Fluor Island group, Lake Superior.

29. WOODSIA ALPINA (Bolton) S. F. Gray.

Silver Islet, Thunder Cape, on ancient glacial deposits which form cliff.

30. WOODSIA GLABELLA R. Br.

On face of cliff at top of Little Fluor Island, Lake Superior.

31. ONOCLEA SENSIBILIS L.

In sand-hill region 3 mi. s. e. of Stanley.

32. MATTEUCIA STRUTHIOPTERIS (L.) Todaro.

Along Oliver Creek about 3 miles southeast of Stanley.

During the 1913 trip the islands and peninsulas in the northwestern part of Lake Superior were more thoroughly explored than was the case in 1912, and a comparison of the two lists will show a considerable difference in the relative pteridophyte floras of the regions covered. Altogether sixteen names (species, varieties, or forms) not reported in the present paper were included in the first paper, so that with the additions for the season of 1912, the total record for the two collections of pteridophytes is forty-eight; for the region extending from about twenty miles west of Fort William to Heron Bay and north to about twenty miles north of Nepigon.

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